DOCUMENT RESUME

ED 174 125 HE 011 467

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TITLE Sponsored Research as a Solution to Four Pervasive Problems in Graduate Education. AIR Forum 1979 Paper.
PUB DATE May 79
NOTE 11p.; Paper presented at the Annual Forum of the Association for Institutional Research (19th, San Diego, California, May 13-17, 1979)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Affirmative Action; *College Faculty; Faculty Development; Faculty Workload; Federal Aid; Females; *Graduate Study; *Grants; Higher Education; Internship Programs; Minority Groups; Models; *Research Opportunities; Research Problems; *Research Projects; Sabbatical Leaves
IDENTIFIERS *AIR Forum 1979; *Sponsored Research

ABSTRACT

Four problems that will be of major concern to academic institutions granting graduate degrees in the coming decade and ways in which sponsored research can help solve them are discussed. The four problems are defined as: (1) the threat posed to research performed by faculty by increased teaching loads; (2) the increasing lack of opportunities for new graduates of doctoral programs to join faculties; (3) the continuing pressures that academic institutions are under to increase the number of women and minorities on their teaching staffs; and (4) the changing employment prospects of students completing their graduate degrees, and thus the skills they need to acquire. A five-point model is proposed which is designed to provide a solution to each of these problems through the generation of sponsored research. The model incorporates practical experience for students in their fields; use of grant monies to provide financial aid for students; active involvement of professors in research in their fields; release of tenured faculty to do research and concomitant hiring of adjunct faculty to broaden the range of ideas and course offerings; and use of the adjunct faculty positions created with grant money to increase the number of women and minority faculty members. Examples of specific Federal funding programs available to support such research endeavors are mentioned, such as the National Science Foundation's Minority Institutions Graduate Traineeship Program. (SW)

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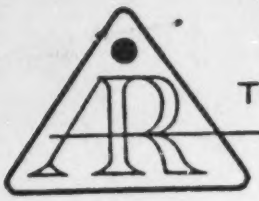

THE ASSOCIATION FOR INSTITUTIONAL RESEARCH

ED174125

This paper was presented at the Nineteenth Annual Forum of the Association for Institutional Research held at the Town and Country Inn in San Diego, California, May 13-17, 1979. This paper was reviewed by the AIR Forum Publications Committee and was judged to be of high quality and of interest to others concerned with the research of higher education. It has therefore been selected to be included in the ERIC collection of Forum papers.

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# SPONSORED RESEARCH AS A SOLUTION TO FOUR PERVASIVE PROBLEMS IN GRADUATE EDUCATION

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Paper presented at the Association for Institutional Research Forum
San Diego, California
May 1979

ABSTRACT

This paper discusses four problems which will be of major concern to academic institutions granting graduate degrees in the coming decade. Upon outlining these problems, the paper describes the ways in which sponsored research can serve as a solution to each through presentation of a five-point theoretical model. Examples of specific federal funding programs which operationalize this model are then offered.

# SPONSORED RESEARCH AS A SOLUTION TO FOUR PERVASIVE PROBLEMS IN GRADUATE EDUCATION

Graduate education often is falsely distinguished from undergraduate education by the difficulty of the courses of the demands they place upon the students or in terms of advanced instructional content, or lengthier, more formal term paper requirements. Rather, the real difference is that undergraduate education is aimed primarily at the mastery of content, while graduate education is aimed primarily at the mastery of techniques for expanding, interpreting or applying knowledge. While the former is content-oriented, the latter is research-oriented or professionally-oriented in that it strives to build student skills in critical evaluation and to maximize the emergence of new theory and research.

The purpose of this paper is to discuss four problems which will be of major concern to academic institutions granting graduate degrees in the coming decade. While each of these problems may be applicable to universities and colleges as a whole, it is the position of the authors that they will be of greater significance to education at the graduate level. After describing these problems, the paper will describe the ways in which sponsored research can serve as a solution to each through presentation of a five-point theoretical model. Examples of specific federal funding programs which operationalize this model will then be offered.

The instructional orientation of graduate education makes it vital for teachers of graduate students to be very intimately connected with research in their fields, and to involve students in whatever research is being done. Graduate professors must be

cognizant of and be involved at the cutting edge of their particular disciplines, since graduate education relates directly to what is currently emerging in the way of theory and methodology in the field in question. The interplay of teaching and research is vital to graduate education, but has never been strong at the so-called "teaching colleges" and is threatened by increased teaching loads that come with the economics forced by declining enrollments.

As is well known, enrollments in colleges and universities have stabilized or fallen off from the highs achieved in the early 1970s, and this situation is expected to continue well into the 1980s. The effects on the academic job market have been felt since about 1975. Most institutions are becoming "tenured in," and there will be relatively few opportunities in the future for new graduates of doctoral programs to join faculties. The extension of mandatory retirement to age 70 will further reduce the number of openings. To make matters still worse, many newly hired faculty last year were without completed doctorates. Thus, the faculty of the average university or college in the 1980s is likely to consist of a large number of older tenured faculty, a relatively small number of assistant professors and a large number of untenured temporary faculty without doctorates. Older faculty will have relatively little incentive to improve or update their courses because they have a job for life; untenured faculty will have relatively little incentive to improve or update their courses because they have a job for only one or two years and little likelihood of obtaining another teaching position.

The reduced number of new faculty openings has not reduced the pressures that academic institutions are under to increase the number of women and minorities on their teaching staffs. Thus,

progress in removing past inequities is not as fast as these groups would like, but what progress there is must be achieved by substituting inequities of another kind.

The reduced number of new openings has significantly changed the employment prospects of students completing their graduate degree, and thus of the skills that they need to acquire. Exemplifying this situation, the National Endowment for the Humanities has awarded a $500,000 grant to retrain holders of doctorates, so that they will be able to obtain jobs. Graduate education has not met this challenge, but rather continues to provide training aimed primarily at academic careers.

The five-point model we propose is aimed at providing a solution to each of these problems through the generation of sponsored research.

- Extramural support permits students to learn how to conduct research in their field through work on real problems and often leads to publications.
- Grants can provide a needed source of financial aid for students by paying them for their work on research problems.
- Research is one important way for professors to keep actively involved in their own fields and provides first-hand experience to enrich teaching.
- Tenured faculty released to do research can be replaced through grant money by adjunct faculty selected to broaden the range of ideas and courses offered.
- With few openings for new full-time faculty likely, adjunct faculty acquired through grant money offer a means of increasing the number of women and minority faculty members.

A vast number of grant programs are available to support the concerns of graduate education. Thus, it is only possible to provide examples of how grant programs might be used to reduce the pervasive problems described above.

The National Science Foundation's Minority Institutions Graduate Traineeship Program provides stipends and fees to graduate students in the sciences at eligible institutions. Trainees often are given appointments as teaching assistants, but we feel that it is more in keeping with the purpose of the traineeships to give them appointments as research assistants. As such, in addition to their regular class work, they would learn how to conduct research in their field under the tutelage of a single professor. Such work could culminate in articles or papers presented at professional conferences which the trainee and professor write and receive credit for jointly. This program responds to at least the first three parts of the five-point model.

The National Institutes of Health's Minority Biomedical Support Program (MBS) supports basic research projects at educational institutions. This program, like the one just described, is aimed at providing grant money to minority institutions. Through this program, graduate students can participate in significant scientific projects with graduate instructors, the product of which could be publications, convention papers, or other similar presentations. The MBS Program responds to at least the first four parts of the model.

The National Institute of Mental Health's Center for Metropolitan Studies offers support for basic and applied research focusing upon human behavior and the urban environment. Through this program,

both faculty and graduate students have the opportunity to engage in the study of very significant problems, the results of which may include publications, convention papers, or other similar presentations. As in the case of the MBS program, faculty members would be supported for release time to work on the grant project. This program responds to all five parts of the model.

The National Endowment for the Humanities' Media Program supports projects in film, radio, and television which advance public understanding of the humanities. In the case of this program, graduate students could work with faculty in preparing actual production projects. This program could be used by graduate instructors in the humanities to learn the techniques in a secondary field, namely television, radio, or film. The Media Program responds to at least the first four parts of the model.

The Center for Advanced Study in the Behavioral Sciences offers fellowships for instructors in a number of fields. Each fellow resides at the Center, located in the vicinity of Stanford University, for a period of seven to twelve months. The focus of the program is the opportunity to devote an extended period of time to further professional development at the advanced level and to be in the company of other leading scientists and scholars. This program responds to at least the third and fourth parts of the model.

The purpose of this paper has been to outline the ways in which sponsored research can serve as a solution to four pervasive problems in graduate education, problems which all graduate degree granting institutions will face in increasing proportions in the coming decade.

The nature of graduate instruction makes it crucial for professors at that level to undertake sponsored research. Through such research, they have the opportunity to continually update and

sharpen their capabilities, so that, as a result, their work provides an impact upon the direction of their discipline and upon the quality of the instructional process in which they participate.

Additionally, involvement in research stimulates an atmosphere of academic excellence and provides a positive thrust for any graduate program. In this regard, the university can be viewed as an agent of change, a critic of social actions, a system posing alternatives. Sponsored research leads to research projects and programmatic development otherwise unfeasible.

In more specific terms, sponsored research at the graduate level has at least six potential outcomes:

(1) It provides for the services of unique practitioners, either through a teaching assignment, the performance of a specific task, or through involvement in an academic conference.

(2) It allows for the acquisition of buildings, laboratories, and equipment, all so very critical for education at the graduate and professional levels.

(3) It provides students the opportunity to participate in real research activities, and, in so doing, gives them the skills they need to compete in the job market upon completion of their degree.

(4) It stimulates visibility and recognition in the community which potentially lead to financial contributions to support the university from alumni, community agencies, and the local citizenry, as well as increased enrollments and potential employment of students who graduate from the university.

(5) It provides for potential internship experiences for graduate students in community agencies.

(6) It generates travel funds for faculty and students to professional conferences (students, perhaps, getting initial exposure to making convention presentations).

In an era of reduced budgets and tightened resources, sponsored research is crucial to graduate education in the 1980s, especially if academic institutions intend to deliver the quality of training required to meet the demands of a changing job market. Looking at it from a different angle, it is the reputation of the university and its instructors that draws graduate students to a particular institution; it is, therefore, in the best interests of a university to stimulate academic excellence through the generation of research activity.